

REMARKS

Claims 1-4, 6-36, and 38-67 are pending and under consideration in this application. Claims 1 and 65 are amended herein. Support for the amendments to claims 1 and 65 may be found in the claims as originally filed. Reconsideration is requested based on the foregoing amendment and the following remarks.

Interview Summary

The Applicants submit the following summary of the Office interview that took place May 19, 2006 between the undersigned representative of the Applicants and the Examiner.

Office Conference:

The Applicants thank the Examiner for the many courtesies extended to the undersigned representative of the Applicants during the interview that took place May 19, 2006.

Among the issues discussed during that interview were the patentability of the claims over the cited references and, in particular, the recitation "a pattern estimation unit which estimates legality of an access request based on the illegal access patterns stored in the illegal pattern database and on a predetermined pattern estimation rule" (emphasis added).

Although the Office urged the Applicants to amend the claims further sua sponte, the Applicants requested that one further search be conducted for a reference disclosing the above-noted feature, before the claims were amended further. The Applicants are pleased to note that none of the further references cited in the Office Action appear to disclose this feature either, as discussed more fully below. Further favorable consideration is thus requested.

Objections to the Specification:

The Title of the Invention was objected to for being inadequately descriptive. The Title is substantially similar to the preambles of the independent claims, which is submitted to be customary. Still, in the interest of compact prosecution only, the following new Title has been applied to the application. Withdrawal of the objection is earnestly solicited.

"FILTERING APPARATUS, FILTERING METHOD AND COMPUTER PROGRAM PRODUCT
FOR ESTIMATING THE LEGALITY OF AN ACCESS REQUEST"

Claim Rejections - 35 U.S.C. § 101:

Claim 65 was rejected under 35 U.S.C. § 101 as directed to non-statutory subject matter.

Claim 65 was amended to recite “stored in computer readable medium,” and is thus submitted be directed to statutory subject matter. Withdrawal of the rejection of claim 65 is earnestly solicited.

Claim Rejections - 35 U.S.C. § 112:

Claim 1 was rejected under 35 U.S.C. § 112, second paragraph, as indefinite. Claim 1 was amended to make it more definite. Withdrawal of the rejection is earnestly solicited.

Claim Rejections - 35 U.S.C. § 102:

Claims 1, 2, 33, 34, 65, 66, and 67 were rejected under 35 U.S.C. § 102(b) as anticipated by U.S. Patent No. 7,051,368 to Howard et al. (hereinafter “Howard”). The rejection is traversed to the extent it would apply to the claims as amended. Reconsideration is earnestly solicited.

The third clause of claim 1 recites:

A pattern estimation unit which estimates legality of an access request based on the illegal access patterns stored in the illegal pattern database and on a predetermined pattern estimation rule.

Howard neither teaches, discloses, nor suggests estimating the “legality of an access request,” let alone “a pattern estimation unit which estimates legality of an access request based on the illegal access patterns stored in the illegal pattern database and on a predetermined pattern estimation rule,” as recited in claim 1. Howard, rather, screens input strings to identify strings that contain attack patterns that can be used to *attack* a Web server. Attack patterns are not contained in legal access requests. In particular, as described at column 1, lines 7-12:

This invention relates to methods and systems for screening input strings that are intended for use by Web servers. In particular, the invention pertains to methods and systems for identifying input strings that contain attack patterns that can be used to attack a Web server, and, in some instances, reacting to the attack patterns once identified.

Since Howard screens input strings to identify attack patterns that can be used to attack a Web server, Howard is not estimating “legality of an access request based on the illegal access patterns stored in the illegal pattern database and on a predetermined pattern estimation rule,” as recited in claim 1.

Howard, furthermore, is *screening* input strings. In particular, as described at column 2, lines 14 and 15:

Methods and systems of screening input strings that are intended for use by a

Web server are described.

Since Howard is screening input strings, Howard is not estimating the “legality of an access request,” as recited in claim 1.

Furthermore, in Howard, an input string that is intended for use by a Web server is received and evaluated using the search pattern to ascertain whether an *attack* pattern is present. In particular, as described at column 2, lines 20-25:

An input string that is intended for use by a Web server is received and evaluated using the search pattern to ascertain whether the attack pattern is present. If an attack pattern is found that matches the search pattern, then a remedial action is implemented.

Since Howard evaluates an input string to ascertain whether an attack pattern is present, Howard is not estimating the “legality of an access request,” as recited in claim 1.

Finally, in Howard, an input string is evaluated using the search pattern to ascertain whether an *attack* pattern is present. In particular, as described at column 8, lines 52-67:

A Web server input string screening method comprising:
determining an attack pattern that can be used to attack a Web server, the attack pattern comprising content that is determined as constituting one or more of a disclosure attack or an integrity attack on the Web server,
defining a search pattern that can be used to detect the attack pattern, the search pattern being defined in a manner that permits variability among its constituent parts;
receiving an input string that is intended for use by a Web server;
evaluating the input string using the search pattern to ascertain whether the attack pattern is present; and
implementing a remedial action if an attack pattern is found that matches the search pattern.

Since Howard evaluates an input string to ascertain whether an attack pattern is present, Howard is not estimating the “legality of an access request,” as recited in claim 1.

The fifth clause of claim 1 recites:

A transmission unit which controls transmission of the access request based on the determination result of the pattern determination unit so as to transmit the access request to the server when the access request is estimated to be legal.

Howard neither teaches, discloses, nor suggests transmitting “the access request to the server when the access request is estimated to be legal,” let alone “a transmission unit which controls transmission of the access request based on the determination result of the pattern determination unit so as to transmit the access request to the server when the access request is

estimated to be legal,” as recited in claim 1. No estimate is made in Howard of the “legality of an access request,” as discussed above. Howard, rather, processes any input string as long as there are no attack patterns present in the input string. In particular, as described at column 7, lines 36-45:

Step 206 receives an input string from the client that is intended for use by the Web server, and step 208 evaluates the input string using one or more of the search patterns. Step 210 determines whether any of the attack patterns are present in the input string. An attack pattern is present if a match is found for the search pattern in the input string. If there are no attack patterns present in the input string, then step 212 processes the input string or request that is associated with the input string.

Since Howard screens input strings to identify attack patterns that can be used to attack a Web server, Howard is not transmitting “the access request to the server when the access request is estimated to be legal,” as recited in claim 1.

Howard, furthermore, implements a remedial action if an *attack pattern* is identified to be associated with the input string. In particular, as described at column 7, lines 47-51:

If, on the other hand, there is an attack pattern that is identified to be associated with the input string (i.e. an attack pattern is found in the input string that matches the search pattern), then step 214 implements a remedial action.

Since Howard implements a remedial action if an attack pattern is identified to be associated with the input string, Howard is not transmitting “the access request to the server when the access request is estimated to be legal,” as recited in claim 1.

Howard, finally, denies a request that is associated with the input string *having* an attack pattern. Howard does not mention treatment accorded any input string that has no attack patterns present in the input string. In particular, as described at column 7, lines 51-58:

Remedial actions can be any actions that are associated with minimizing or eliminating the effect that an attack pattern can have on the Web server. In but one example, this can include denying a request that is associated with the input string. For example, in the case of an input string that is a URL, this could mean returning an error message to the client to the effect that the request could not be executed.

Since Howard denies a request that is associated with the input string having an attack pattern, Howard is not transmitting “the access request to the server when the access request is estimated to be legal,” as recited in claim 1. Claim 1 is submitted to be allowable. Withdrawal of the rejection of claim 1 is earnestly solicited.

Claim 2 depends from claim 1 and adds further distinguishing elements. Claim 2 is thus also submitted to be allowable. Withdrawal of the rejection of claim 2 is also earnestly solicited.

Claims 33 and 34:

The second clause of claim 33 recites:

A pattern estimation unit which estimates legality of an access request based on the illegal access patterns stored in the illegal pattern database and on a predetermined pattern estimation rule.

Howard neither teaches, discloses, nor suggests "a pattern estimation unit which estimates legality of an access request based on the illegal access patterns stored in the illegal pattern database and on a predetermined pattern estimation rule," as discussed above with respect to the rejection of claim 1.

The fourth clause of claim 33 recites:

Controlling transmission of the access request based on determination result of the pattern determination step so as to transmit the access request to the server when the access request is estimated to be legal.

Howard neither teaches, discloses, nor suggests "controlling transmission of the access request based on determination result of the pattern determination step so as to transmit the access request to the server when the access request is estimated to be legal," as also discussed above with respect to the rejection of claim 1. Claim 33 is submitted to be allowable for at least those reasons discussed above with respect to the rejection of claim 1. Withdrawal of the rejection of claim 33 is earnestly solicited.

Claim 34 depends from claim 33 and adds further distinguishing elements. Claim 34 is thus also submitted to be allowable. Withdrawal of the rejection of claim 34 is also earnestly solicited.

Claim 65:

The second clause of claim 65 recites:

Estimating legality of an access request based on the illegal access patterns referred to and on a predetermined pattern estimation rule.

Howard neither teaches, discloses, nor suggests "estimating legality of an access request based on the illegal access patterns referred to and on a predetermined pattern estimation rule," as discussed above with respect to the rejection of claim 1.

The fourth clause of claim 65 recites:

Controlling transmission of the access request based on determination result of the pattern determination step so as to transmit the access request to the server when the access request is estimated to be legal.

Howard neither teaches, discloses, nor suggests “controlling transmission of the access request based on determination result of the pattern determination step so as to transmit the access request to the server when the access request is estimated to be legal,” as also discussed above with respect to the rejection of claim 1. Claim 65 is submitted to be allowable for at least those reasons discussed above with respect to the rejection of claim 1. Withdrawal of the rejection of claim 65 is earnestly solicited.

Claim 66:

The fourth clause of claim 66 recites:

Estimating legality of an access request based on the illegal access patterns referred to and on a predetermined pattern estimation rule.

Howard neither teaches, discloses, nor suggests “estimating legality of an access request based on the illegal access patterns referred to and on a predetermined pattern estimation rule,” as discussed above with respect to the rejection of claim 1.

The fifth clause of claim 66 recites:

Determining whether the access request is to be transmitted to the server based on the estimate of the legality of the access request.

Howard neither teaches, discloses, nor suggests “determining whether the access request is to be transmitted to the server based on the estimate of the legality of the access request,” as also discussed above with respect to the rejection of claim 1. Claim 66 is submitted to be allowable for at least those reasons discussed above with respect to the rejection of claim 1. Withdrawal of the rejection of claim 66 is earnestly solicited.

Claim 67:

The second clause of claim 67 recites:

Estimating a legality of an access request based on an illegal access pattern stored in an illegal pattern database and on a predetermined pattern estimation rule.

Howard neither teaches, discloses, nor suggests “estimating a legality of an access request

based on an illegal access pattern stored in an illegal pattern database and on a predetermined pattern estimation rule,” as discussed above with respect to the rejection of claim 1.

The third clause of claim 67 recites:

Determining whether the access request is to be abandoned based on the estimate of the legality of the access request.

Howard neither teaches, discloses, nor suggests “determining whether the access request is to be transmitted to the server based on the estimate of the legality of the access request,” as recited in claim 67. Howard, rather, denies requests associated with input strings having an *attack* pattern, as discussed above with respect to the rejection of claim 1. Claim 67 is submitted to be allowable for at least those reasons discussed above with respect to the rejection of claim 1. Withdrawal of the rejection of claim 67 is earnestly solicited.

Claim Rejections - 35 U.S.C. § 103:

Claims 3, 4, 6-19, 26-30, 35, 36, 38-51, and 58-62 were rejected under 35 U.S.C. § 103 as being unpatentable over Howard in view of US 2003/0051026 to Carter et al. (hereinafter “Carter”). The rejection is traversed. Reconsideration is earnestly solicited.

Claims 3, 4, 6-19 and 26-30 depend from claim 1 and add further distinguishing elements. Howard neither teaches, discloses, nor suggests “a pattern estimation unit which estimates legality of an access request based on the illegal access patterns stored in the illegal pattern database and on a predetermined pattern estimation rule,” or “a transmission unit which controls transmission of the access request based on the determination result of the pattern determination unit so as to transmit the access request to the server when the access request is estimated to be legal,” as discussed above with respect to the rejection of claim 1.

Carter does not either, and thus cannot make up for this deficiency of Howard with respect to claims 3, 4, 6-19 and 26-30. Thus, even if Howard were combined as proposed in the Office Action, the claimed invention would not result.

Finally, the Office Action provides no motivation or suggestion to combine the teachings of Howard, Carter and Cahill as required by 35 U.S.C. § 103(a) and the M.P.E.P. §706.02(j)(D), beyond an assertion that “(o)ne of ordinary skill in the art at the time of the invention would have been motivated to make the above mentioned modifications for the reasons discussed in Carter, Paragraph [0005]”.

In paragraph [0005], however, Carter fails to mention any reason at all to include a

pattern estimation unit which estimates legality of an access request based on the illegal access patterns stored in the illegal pattern database, as recited in claim 1. Thus, even if persons of ordinary skill in the art would have been motivated by paragraph [0005] of Carter at the time of the invention, there is no reason to believe the claimed invention would have been the result. Claims 3, 4, 6-19 and 26-30 are submitted to be allowable. Withdrawal of the rejection of claims 3, 4, 6-19 and 26-30 is earnestly solicited.

Claims 35, 36, 38-47, 48-51, and 58-62:

Claims 35, 36, 38-47, 48-51, and 58-62 depend from claim 33 and add further distinguishing elements. Howard neither teaches, discloses, nor suggests "a pattern estimation unit which estimates legality of an access request based on the illegal access patterns stored in the illegal pattern database and on a predetermined pattern estimation rule," or "controlling transmission of the access request based on determination result of the pattern determination step so as to transmit the access request to the server when the access request is estimated to be legal," as discussed above with respect to the rejection of claim 33.

Carter does not either, and thus cannot make up for this deficiency of Howard with respect to claims 35, 36, 38-47, 48-51, and 58-62. Thus, even if Howard were combined as proposed in the Office Action, the claimed invention would not result. Claims 35, 36, 38-47, 48-51, and 58-62 are submitted to be allowable. Withdrawal of the rejection of claims 35, 36, 38-47, 48-51, and 58-62 is earnestly solicited.

Claims 31, 32, 63, and 64:

Claims 31, 32, 63, and 64 were rejected under 35 U.S.C. § 103 as being unpatentable over Howard and Carter, and further in view of US 6,535,855 to Cahill et al. (hereinafter "Cahill"). The rejection is traversed. Reconsideration is earnestly solicited.

Claims 31 and 32 depend from claim 1 and add further distinguishing elements. Neither Howard nor Carter teach, disclose, or suggest "a pattern estimation unit which estimates legality of an access request based on the illegal access patterns stored in the illegal pattern database and on a predetermined pattern estimation rule," or "a transmission unit which controls transmission of the access request based on the determination result of the pattern determination unit so as to transmit the access request to the server when the access request is estimated to be legal," as discussed above.

Cahill does not either, and thus cannot make up for this deficiency of Howard and Carter

with respect to claims 31 and 32. Thus, even if Howard, Carter and Cahill were combined, as proposed in the Office Action, the claimed invention would not result.

Finally, the Office Action provides no motivation or suggestion to combine the teachings of Howard, Carter and Cahill as required by 35 U.S.C. § 103(a) and the M.P.E.P. §706.02(j)(D), beyond an assertion that “(o)ne of ordinary skill in the art at the time of the invention would have been motivated to make the above mentioned modifications for the reasons discussed in Carter, Paragraph [0026]”.

In paragraph [0026], however, while Carter opines that monitoring and protecting network communication over the Internet is a major purpose of network surveillance and security systems, Carter fails to mention any reason at all to include a pattern estimation unit which estimates legality of an access request based on the illegal access patterns stored in the illegal pattern database, as recited in claim 1. Thus, even if persons of ordinary skill in the art would have been motivated by paragraph [0026] of Carter at the time of the invention, there’s no reason to believe the claimed invention would be at all the result. Claims 31 and 32 are thus also submitted to be allowable. Withdrawal of the rejection of claims 31 and 32 is earnestly solicited.

Claims 63 and 64:

Claims 63 and 64 depend from claim 33 and add further distinguishing elements. Neither Howard nor Carter teach, disclose, or suggest ““a pattern estimation unit which estimates legality of an access request based on the illegal access patterns stored in the illegal pattern database and on a predetermined pattern estimation rule,” or “controlling transmission of the access request based on determination result of the pattern determination step so as to transmit the access request to the server when the access request is estimated to be legal,” as discussed above.

Cahill does not either, and thus cannot make up for this deficiency of Howard and Carter with respect to claims 63 and 64. Thus, even if Howard, Carter and Cahill were combined, as proposed in the Office Action, the claimed invention would not result.

Finally, the Office Action provides no motivation or suggestion to combine the teachings of Fuh, Carter and Cahill as required by 35 U.S.C. § 103(a) and the M.P.E.P. §706.02(j)(D), beyond an assertion that “(o)ne of ordinary skill in the art at the time of the invention would have been motivated to make the above mentioned modifications for the reasons discussed in Carter, Paragraph [0026]”, as discussed above. Claims 63 and 64 are submitted to be allowable.

Withdrawal of the rejection of claims 63 and 64 is earnestly solicited.

Claims 20, 21, 52 and 53:

Claims 20, 21, 52 and 53 were rejected under 35 U.S.C. § 103 as being unpatentable over Howard in view of US Patent Application Publication 2002/0165894 to Kashani et al. (hereinafter "Kashani") and US Patent Application Publication 2003/0135555 to Birrel et al. (hereinafter "Birrel"). The rejection is traversed to the extent it might apply to the claims as amended. Reconsideration is earnestly solicited.

Claims 20 and 21 depend from claim 1 and add further distinguishing elements. Howard neither teaches, discloses, nor suggests "a pattern estimation unit which estimates legality of an access request based on the illegal access patterns stored in the illegal pattern database and on a predetermined pattern estimation rule," or "a transmission unit which controls transmission of the access request based on the determination result of the pattern determination unit so as to transmit the access request to the server when the access request is estimated to be legal," as discussed above with respect to the rejection of claim 1.

Neither Kashani nor Birrel do not either, and thus cannot make up for this deficiency of Howard with respect to claims 20 and 21. Thus, even if Howard, Kashani and Birrel were combined as proposed in the Office Action, the claimed invention would not result. Claims 20 and 21 are submitted to be allowable. Withdrawal of the rejection of claims 20 and 21 is earnestly solicited.

Claims 52 and 53:

Claims 52 and 53 depend from claim 33 and add further distinguishing elements. Howard neither teaches, discloses, nor suggests "a pattern estimation unit which estimates legality of an access request based on the illegal access patterns stored in the illegal pattern database and on a predetermined pattern estimation rule," or "controlling transmission of the access request based on determination result of the pattern determination step so as to transmit the access request to the server when the access request is estimated to be legal," as discussed above with respect to the rejection of claim 33.

Neither Kashani nor Birrel do not either, and thus cannot make up for this deficiency of Howard with respect to claims 52 and 53. Thus, even if Howard, Kashani and Birrel were combined as proposed in the Office Action, the claimed invention would not result. Claims 52 and 53 are submitted to be allowable. Withdrawal of the rejection of claims 52 and 53 is

earnestly solicited.

Claims 22-25 and 54-57:

Claims 22-25 and 54-57 were rejected under 35 U.S.C. § 103 as being unpatentable over Howard in view of Carter and Kashani. The rejection is traversed. Reconsideration is earnestly solicited.

Claims 22-25 depend from claim 1 and add further distinguishing elements. Howard neither teaches, discloses, nor suggests “a pattern estimation unit which estimates legality of an access request based on the illegal access patterns stored in the illegal pattern database and on a predetermined pattern estimation rule,” or “a transmission unit which controls transmission of the access request based on the determination result of the pattern determination unit so as to transmit the access request to the server when the access request is estimated to be legal,” as discussed above with respect to the rejection of claim 1.

Neither Carter nor Kashani do either, and thus cannot make up for this deficiency of Howard with respect to claims 22-25. Thus, even if Howard, Carter and Kashani were combined as proposed in the Office Action, the claimed invention would not result. Claims 22-25 are submitted to be allowable. Withdrawal of the rejection of claims 22-25 is earnestly solicited.

Claims 54-57:

Claims 54-57 depend from claim 33 and add further distinguishing elements.

Howard neither teaches, discloses, nor suggests “a pattern estimation unit which estimates legality of an access request based on the illegal access patterns stored in the illegal pattern database and on a predetermined pattern estimation rule,” or “controlling transmission of the access request based on determination result of the pattern determination step so as to transmit the access request to the server when the access request is estimated to be legal,” as discussed above with respect to the rejection of claim 33. Neither Carter nor Kashani do either, and thus cannot make up for this deficiency of Howard with respect to claims 54-57. Thus, even if Howard, Carter and Kashani were combined as proposed in the Office Action, the claimed invention would not result. Claims 54-57 are submitted to be allowable. Withdrawal of the rejection of claims 54-57 is earnestly solicited.

Conclusion:

Accordingly, in view of the reasons given above, it is submitted that all of claims 1-4, 6-36, and 38-67 are allowable over the cited references. Allowance of all claims 1-4, 6-36, and 38-

67 and of this entire application is therefore respectfully requested.

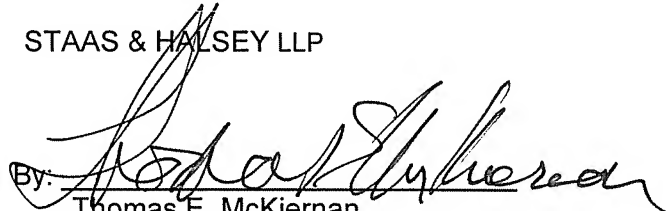
Finally, if there are any formal matters remaining after this response, the Examiner is requested to telephone the undersigned to attend to these matters.

If there are any additional fees associated with filing of this Amendment, please charge the same to our Deposit Account No. 19-3935.

Respectfully submitted,

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